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EXAMINER

NGUYEN, HIEP

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 04/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/823,679

Applicant(s)

MAGOON ET AL.

Examiner

Hiep Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02-25-02.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 25 February 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

Applicant's amendment filed on 02-25-02 has been received and entered in the case. New ground of rejections necessitated by the amendment is set forth below.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the recitations "a control signal" and "the control signal" on lines 6 and 8 of claim 3 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Correction and or clarification is required.

Regarding claim 1, the recitation "to prevent the third switch node from functioning as an alternating current (AC) ground during operation of the switch" is indefinite because it is unclear how the third switch node can function as "an alternating (AC) ground". The third switch node, which is the control node of a transistor (gate or base), receives a signal (AC or DC) and it is not true that the third switch node will function as a ground.

Claim 2 is indefinite because it depends upon claim 1.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Huijsing et al. (US Pat. 4,678,947).

Regarding claim 1, figure 2 of Huijsing shows a transistor circuit for implementing a switch, comprising:

- a first switch node (T1) configured to connect to an external circuit;

- a second switch node (T2) configured to connect to the external circuit;

- a transistor device (Q0) having a first terminal electrically communicating with the first switch node, a second terminal connected to the second switch node, and a third terminal configured to receive a control signal that controls the electrical connectivity between the first terminal and the second terminal;

- a third switch node (CT) for receiving the control signal: and

- a circuit (A1, R1) connected to the third switch node (CT) and the third terminal (base) of the transistor device, the circuit having a sufficiently high impedance to prevent the third switch node from functioning as “an alternating current (AC) ground during operation of the switch”. Note that (A1) has very high input impedance.

Claims 3-5 are rejected under 35 U.S.C. 102 (b) as being anticipated by Simmons et al. (5,223,751).

Regarding claims 3-5, figure 3 of Simmons shows a transistor circuit for implementing a switch, comprising: a first switch node configured to connect to an external circuit; a second switch node configured to connect to the external circuit; a transistor device (38) having a first terminal connected to the first switch node, a second terminal connected to the second switch node, and a third terminal configured to receive a control signal (IN) for controlling the electrical connectivity between the first terminal and the second terminal (when transistor 38 is activated); and a circuit (36) connected to the second terminal of the transistor device, the circuit configured to provide a voltage (Vc) to the second terminal when the control signal engages the transistor device. Element (38) is a MOSFET; circuit (36, 39) is an inverter.

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Claims 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin (US Pat. 4,752,703).

Regarding claim 6, figure 1 of Lin shows a transistor circuit for implementing a differential switch comprising:

a first switch node (X) configured to connect to an external circuit;

a second switch node (Y) configured to connect to the external circuit;

a first transistor (11) device having a first terminal connected to the first switch node, a second terminal, and a third terminal configured to receive a control signal (Vin) applied to the gate of (11) that controls the electrical connectivity between the first terminal and the second terminal (when element 11 is turned on); a second transistor device (12) having a first terminal connected to the second terminal of the first transistor device (11), a second terminal connected to the second switch node (Y), and a third terminal configured to receive the control signal (Vin) and a third transistor device (17) having a first terminal connected to the first terminal of the first transistor device (11), a second terminal connected to the second terminal of the second transistor device (12), and a third terminal (gate) configured to receive the control signal (Vin). The first, second and third transistors are MOSFET transistors.

Regarding claim 8, it is inherent that the first, second and third transistors have parasitic capacitances (gate-source or gate drain capacitance) and their parasitic characteristics are predetermined during the phases of manufacturing.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huijsing et al. (US Pat. 4,678,947).

Regarding claim 2, figure 2 of Huijsing includes all the limitations of the present invention except for the limitation that the transistor device is a MOSFET transistor. However, it is old and

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well-know in the art that bipolar transistor and MOSFET transistor are interchangeable. Therefore, it would have been obvious to those skilled in the art to replace to bipolar transistor (Q0) taught by Huijsing with the MOSFET transistor for reducing leakage current and saving energy.

### *Response to arguments*

In the Remarks page 10, paragraph 1, Applicant argues that the '751' does not disclose, teach or suggest a transistor for implementing a switch. It is old and well- known that a transistor works like a switch if it is operated in the saturation region, or combined with other transistor to form a logic device. In claim 5, which depends upon claim 3, Applicant claims that the circuit of claim 3 is an INVERTER (not a **switch**). Thus, claim 3 reads on figure 3 of Simmons. The limitation "a switch" cannot be relied upon to distinguish over the prior art. The same analysis is true for the "switch" in claim 6.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hiep Nguyen whose telephone number is (703) 305-0127. The examiner can normally be reached on Monday to Friday from 7:30 A.M.to 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached on (703) 746-5716. The fax phone number for this Group is (703) 308-7725.

Any inquiry of a general nature or relating to the status of this application or proceeding


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should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Hiep Nguyen

Examiner

04-22-02



TUANT. LAM  
PRIMARY EXAMINER